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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/908,994	07/17/2001	John Shigeura	4470	8729

22896 7590 12/04/2002

PATTI SELAN, PATENT ADMINISTRATOR
APPLIED BIOSYSTEMS
850 LINCOLN CENTRE DRIVE
FOSTER CITY, CA 94404

EXAMINER

SISSON, BRADLEY L

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/908,994

Applicant(s)

SHIGEURA ET AL.

Examiner

Bradley L. Sisson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II, claims 10-20, in Paper No. 6 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 10-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neil et al.

6. O'Neil et al., disclose a method by which nucleic acids are immobilized to an addressable solid support through nucleotide sequence-specific binding and are in turn released from their solid support in a specific manner.

7. O'Neil et al., teach the use of "recovery tags," which, as found at column 15, last paragraph, are preferably polynucleotides.

8. Column 16, bridging to column 17, discloses various forms that the solid support may take, including arrays and beads.

9. The bound nucleic acids may be sequencing ladders, as well as amplification products; see column 19.

10. The polynucleotides are released from their solid supports via heating.

11. The aspect of using a "flow path" (claim 10) is met by the disclosure of using capillary channels (column 4, lines 48-49).

12. In view of the disclosures of the prior art of record, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to have modified the method of O'Neil et al., such that one would have been able to have isolated one or more nucleic acids from a mixture of same whereby nucleic acids are immobilized to a solid support in an addressable manner and are released from said solid support through the altering of a physical property (temperature). In view of the detailed disclosure, and wide applicability, the ordinary

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artisan would have been amply motivated and would have had a most reasonable expectation of success.

13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neil et al. (US Patent 6,124,092) as applied to claims 10-14 and 16-20 above, and further in view of Hellyer et al. (US Patent 6,207,818 B1).

14. See above for the basis of the rejection as it pertains to the disclosure of O'Neil et al.

15. O'Neil et al., does not disclose using voltage so to alter a physical property.

16. Hellyer et al., disclose a method of effecting stringency of hybridization conditions whereby one or more nucleic acids are immobilized to a solid support such as an array through manipulation of the voltage at specific sites on the support (see columns 3-4). Accordingly, one of skill in the art can manipulate hybridization conditions through voltage on parallel with that of temperature manipulation.

17. In view of the disclosures of the prior art of record, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of O'Neil et al., by substituting temperature modulation with voltage modulation as such allows for precise control of stringency at the various positions on an array. In view of the detailed guidance provided, the ordinary artisan would have reasonably expected to analyze and manipulate one or more samples in a simultaneous manner (see column 4 where "electronic multiplexing" is disclosed). Said ordinary artisan would have also been so motivated as "[t]he use of electronics in this technology provides increased versatility and flexibility over such conventional methods" (column 4, second paragraph).

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18. For the above reasons, and in the absence of convincing evidence to the contrary, the claims are rejected as being obvious in view of the prior art of record.

Conclusion


19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,419,824 B1 (Gjerde et al.) discloses an apparatus and related method for purifying polynucleotides.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley L. Sisson whose telephone number is (703) 308-3978.

The examiner can normally be reached on 6:30 a.m. to 5 p.m., Monday through Thursday.

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9307 for After Final communications.

22. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



Bradley L. Sisson
Primary Examiner
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